



ENERGY POLICY UPDATE

MARCH 18, 2014

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email [Gloria Castro](#).

UPCOMING WEBINARS

State & Local Energy Efficiency Action Network Webinar:

[Blueprint for Efficiency - Financing Solutions for Energy Efficiency – Energy Efficiency Financing Programs 201](#)

Tuesday, March 18, 2014
9:00 AM – 10:30 AM

State & Local Energy Efficiency Action Network Webinar:

[Setting Energy Savings for Utilities](#)

Thursday, March 27, 2014
11:00 AM – 12:00 PM MST
[Click here to register.](#)

U.S Dept. of Energy Webinar:
[Best of the Clean Cities Tools & Resources](#)

Monday, March 31, 2014
1:00 PM – 2:00 PM EST
[Click here to register.](#)

U.S Dept. of Energy Webinar:
[Engaging Building Occupants to Reduce Energy Use](#)

Tuesday, April 1, 2014
3:00 PM – 4:00 PM EST
[Click here to register.](#)

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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

[Arizona Solar Jobs Just a Tiny Portion of the Bigger Employment Picture](#)

[Phoenix Business Journal, Mar. 11] There were close to 8,600 solar jobs in Arizona last year, according to the Solar Foundation. That is down from 9,800 in 2012. The upcoming March 14 weekly edition of the *Phoenix Business Journal* will examine the state of solar energy in Arizona, what issues challenge the industry and how it stacks up to other states and industries. Today, we'll take a look at what kind of employment driver solar is in California and Arizona — the top two U.S. states for the industry. The answer is that the industry isn't much of a jobs driver, despite renewable subsidies for consumers and businesses and purchases by public-sector entities such as schools and universities.

[Ariz. Universities Collaborate To Grow Algae from Wastewater](#)

[ASU News, Mar. 10] Arizona universities are working together to turn the state's waste to gold – or at least renewable fuel. As part of an Arizona Board of Regents-funded project, students and researchers from Arizona State University, Northern Arizona University and the University of Arizona are collaborating to grow algae using wastewater. The algae can then be harvested to create fuel, feed and food products. The collaboration is designed to advance the application of algae in Arizona as an industry to produce valuable products and remediate wastewater, and to educate and develop a workforce to support the industry. The goal is to maximize Arizona's resources. On March 7, the public was invited to learn about the ongoing projects at each university. The University of Arizona will host a public forum to present student work and projects, which range from aquaculture to the study of algal DNA and the use of saline waters to grow algae. Contact jsmith@ag.arizona.edu for more information.

[Arizona Utilities Questioned About Readiness for Attack](#)

[Az Republic, Mar. 10] The state's top utility regulator, Arizona Corporation Commission Chairman Bob Stump, wants electric companies to explain whether they are prepared to defend the electric grid against terrorist attacks. The concern is prompted by an attack last April on an electrical substation in California. For 19 minutes, gunmen opened fire on the facility near San Jose and knocked out 17 transformers. Nobody was caught in

the incident. Pacific Gas and Electric prevented a blackout by rerouting power. Stump and fellow commissioner Robert Burns sent a letter last week to Arizona Public Service Co., Tucson Electric Power and UniSource Energy Services, Salt River Project, and the state's electric cooperatives, asking them to respond to a list of questions regarding whether they are prepared for similar events.

[Bill To End Electricity Sales Taxes for Factories Tweaked To Aid Cities](#)

[Az Republic, Mar. 10] A bill that would give a financial boost to Arizona manufacturers has been amended so that it does not come at the expense of cities' bottom lines.

Senate Bill 1413 would eliminate the state sales tax that manufacturers pay on electricity, but the latest amendment appeases the concerns of municipal leaders, who could still charge the local tax. The bill is on its way to the Arizona House of Representatives after the Senate approved the amended version late last week. Gov. Jan Brewer specifically requested a bill to eliminate the tax in her State of the State address in January. Proponents say that because most other states do not charge the tax to manufacturers, eliminating it would help the state attract and keep these companies.

[Palo Verde Was Tops in the Nation for 2013 Power Production](#)

[Az Republic, Mar. 10] Palo Verde Nuclear Generating Station once again was the largest power producing facility in the nation in 2013 and one of its three reactors was the top unit in the country. It was the 22nd straight year the plant 50 miles west of downtown Phoenix outperformed the rest of the power plants in the country. It generated 31.4 million megawatt-hours of electricity during the year, according to Arizona Public Service Co., which operates the plant for seven owners from Texas, New Mexico, California and Arizona. One megawatt-hour is enough electricity to supply about 250 homes for an hour.

[Research Partnership To Bring Cutting-Edge Solar Technology to ASU](#)

[ASU News, Mar. 12] Solar-generated electricity, which can suffer from intermittency issues and related impacts on the grid, is about to blossom at Arizona State University. Work will now begin on the development of a hybrid concentrated solar system, following a contract signing with ASU and AORA to provide research expertise in order to enhance the efficiency of this unique technology. AORA Solar NA has agreed to install the first ever Solar Tulip hybrid generating facility in the United States on university land, and ASU faculty, research staff and students will work hand in hand with AORA to enhance the system. This project includes the installation of a hybrid concentrated solar power plant that employs a Solar Tulip to concentrate the sun's energy, turning it into electricity. The system produces power 24/7, moving seamlessly from solar to natural gas or biogas and is also promising because it uses little to no water while producing a high quality thermal output in addition to power.

[State Energy Plan Gets Promo Video](#)

[Phoenix Business Journal, Mar. 13] Gov. [Jan Brewer](#) launched an Arizona master energy plan last month designed to lead the state into a "prosperous and reliable energy future." Now, the governor's office has released an 11-minute video as an overview to the full report, "EmPower Arizona: Executive Energy Assessment and Pathways." [Leisa Brug](#), Gov. Brewer's energy policy adviser, said the video is a "concerted effort to help get the public engaged and informed on energy issues affecting our state." The video features energy experts from state universities, local businesses, government and the Arizona community.

[SunZia Backers, U.S. Rep. Pearce Clash over Results of MIT Study](#)

[Albuquerque Journal, Mar. 12] NEW MEXICO – Sharply different interpretations are emerging about findings from a Massachusetts Institute of Technology study on the potential impacts of the SunZia transmission line on White Sands Missile Range. U.S. Rep. Steve Pearce, R-N.M., told reporters in a telephone conference call Tuesday that the study, conducted by MIT's Lincoln Laboratory, validates key U.S. Department of

Defense concerns that the proposed 500-mile transmission project could interfere with missile tests. The line, as currently planned, includes a 45-mile stretch through White Sands' northern extension area, a "call-up zone" just north of the missile range where ranchers and others are often evacuated for testing and exercises. Pearce said the MIT study confirmed the potential for "vertical obstruction" of missile tests because of the height of the proposed transmission lines. It also cited the possibility of debris raining down on the lines if a missile fails during testing and it outlined the potential for electromagnetic interference from transmission infrastructure. In response, Pearce called on SunZia to comply with DOD requests that it either bury portions of the line in the call-up zone or move it entirely north of the extension area.

[Utility Regulator Fields Solar Complaints](#)

[Arizona Republic, Mar. 13] The state's top utility regulator is getting complaints from Tucson customers of SolarCity Corp. that the solar leasing company is misleading them regarding the state rules for hooking up a solar array, he said Wednesday. Arizona Corporation Commission Chairman Bob Stump wrote a letter to SolarCity CEO Lyndon Rive on Wednesday asking him to address the concerns. "This is an issue of consumer protection and solar installer transparency," Stump said Wednesday. Stump specifically asked Rive to describe the types of statements SolarCity's sales representatives make, the type of training they get, and what kind of monitoring the company undertakes to ensure they provide "accurate and balanced information." He said he is concerned about regarding statements regarding net metering, the arrangement where//by// utilities give customers credit for the electricity they send to the power grid when their homes are not using it. The credit they get for excess generation helps offset the power they draw from the utility at night. SolarCity spent most of 2013 debating Arizona Public Service Co. over net metering. The utility suggested solar net-metered customers pay \$50 to \$100 a month for their use of the utility grid. The five regulators settled on a fee of about \$5 a month in November for customers who install solar after the first of this year.

ALTERNATIVE ENERGY & EFFICIENCY

[ASHRAE/IES Energy Standard Gains 30 Percent Savings over 2004 Standard](#)

[ASHRAE.org, Feb. 19] ATLANTA – The requirements of the 2013 revision of an energy standard recently published by ASHRAE and IES will result in buildings that could achieve six to eight percent more efficiency than buildings built to the 2010 standard. Published in October 2013, ANSI/ASHRAE/IES Standard 90.1-2013, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings. Pacific Northwest National Laboratories (PNNL), in support of the Department of Energy's Building Energy Codes Program, conducted the energy savings analysis on 110 addenda included in the standard. PNNL's analysis shows that the site and energy cost savings are 37.7 percent and 37.8 percent, respectively, by using the 2004 standard as baseline for the regulated loads only. For the whole building energy consumptions, national aggregated site energy savings are 29.5 percent and energy cost savings are 29.0 percent. On a nationally aggregated level, building-type energy savings range from 19.3 percent to 51.9 percent and energy-cost savings from 18.6 to 50.6 percent. These figures include energy use and cost from the whole building energy consumptions including plug and process loads.

[Best Buy To Offer Solar Panel Leases](#)

[Az Republic, Mar. 12] Shoppers can now check out solar panels to make electricity on their roof while they are browsing flat-screen TVs and iPods at Best Buy, which is partnering with California-based SolarCity Corp. The solar company, which specializes in 20-year leasing arrangements where customers get the electricity from solar panels but don't own them, is offering its products at 11 Best Buy stores in Arizona and about 50 other stores in California, Hawaii, New York and Oregon. More than 40 percent of the people who installed solar in Arizona Public Service Co. and Salt River Project areas last year used SolarCity as their provider, representing a big shift in people choosing to lease

rather than purchase their solar panels.

[Bioelectrically Enhanced Wastewater Powers Brewery](#)

[Energy Manager Today, Mar. 13] The Bear Republic Brewery in Cloverdale, Calif., is using a bioelectrically enhanced wastewater to energy system from [Cambrian Innovation](#). The EcoVolt system uses electrically active microbes to treat wastewater while simultaneously generating renewable biogas sufficient to generate up to 50 percent of brewery's electricity needs and greater than 20 percent of the brewery's heat needs. The technology offers the double benefit of meeting energy needs and preserving water. The bioelectric technology, developed by Boston-based Cambrian, was funded through the federal Small Business Innovation Research (SBIR) national program, which provides \$2.5 billion in funds annually to innovative small businesses across the country.

[Distributed Defectors: When Customers Leave the Grid](#)

[GreenBiz.com website, Mar. 10] When the state of Hawaii and the U.S. Energy launched the Hawaii Clean Energy Initiative in 2008 — an effort for which RMI provided detailed and comprehensive policy recommendations to the state — their goal was simple: transition the island state off the imported oil that supplies 90 percent of its energy at an annual cost of \$5 billion to \$7 billion. An associated roadmap plans to achieve 70 percent clean energy by 2030 — 30 percent through energy efficiency measures, the remaining 40 percent through renewables. But how to get there from here? The National Renewable Energy Laboratory's June Hawaii Solar Integration Study found that renewables — especially wind and solar, with an emphasis on solar — could provide 20 percent or more of Hawaii's electricity needs without requiring major system changes. But that'd be only halfway to the stated 40-percent-renewables goal. Amazingly, National Renewable Energy Laboratory's 20-percent-penetration day already may be here. As of Q3 2013, Hawaii again ranked among the top 10 states for both new and cumulative installed PV capacity, according to the Solar Energy Industries Association. The Hawaiian Electric Company supplies power to 95 percent of the state's population. Hawaiian Electric Company's system maps show that many of the grid's circuits on islands such as Oahu and Maui already have so much distributed generation, primarily rooftop solar, that their output exceeds 100 percent of daytime minimum load. In fact, the most distributed generation-congested circuits are now even reaching 15 percent peak load (some circuits hit an astounding 50 to 75 percent or more), approaching or surpassing the levels at which the National Renewable Energy Laboratory study suggests grid operators need to start thinking harder about how to add more solar without compromising system performance. The result — for now — is potential frustration for customers rushing to put solar on their roofs, in part to escape (or at least take a bite out of) residential electricity prices averaging 36 cents per kWh — the most of any U.S. state and triple the national average. Some customers are being told they can't put solar on their roofs and connect to the grid — at least not yet. Hawaiian Electric Company says it must first conduct feasibility studies to figure out how to accommodate more solar on the grid safely, without destabilizing the system. Such studies could take two years or more, raising the ire of some solar advocates.

[Publication Identifies Promising Locations for Algae Projects](#)

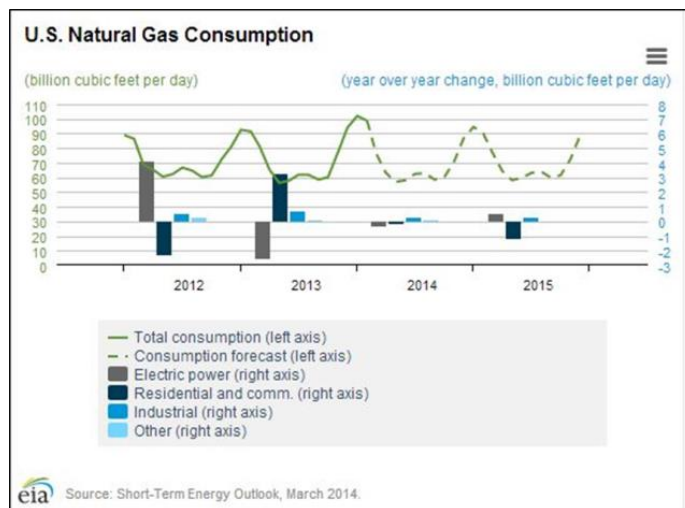
[Algae Biomass Organization, Mar. 13] The Algae Biomass Organization, the trade association for the algae industry, has lauded a new publication from the Pacific Northwest National Laboratory in partnership with Sapphire Energy, "Siting Algae Cultivation Facilities for Biofuel Production in the United States: Trade-Offs between Growth Rate, Site Constructability, Water Availability, and Infrastructure," in the journal Environmental Science and Technology. The publication highlights a new process for rigorously identifying and evaluating sites for commercial algae production facilities. "Effectively siting algae cultivation facilities for commercial biofuel production is critical to the success of every commercial algae project," said Margaret McCormick, chair of the Algae Biomass Organization and CEO of algae company Matrix Genetics. "The biology is so complex, existing 'off-the-shelf' measurement tools fall short. Because this analysis

considers numerous variables along with real-world algae cultivation data, it offers project developers a much more complete and rigorous evaluation of sites." Site selection for large construction projects is a complex task, but a particularly challenging one in the case of algae cultivation in open ponds, where facilities could be thousands of acres in size. The factors that drive success include: a warm and sunny climate, available water, economically available land with soils good for construction, and proximity to transportation and utility infrastructure. In addition, special consideration must be given to local issues that are difficult for national-scale models to address, such as regulatory constraints, tax incentives, receptivity of local populations and ecological constraints.

ENERGY/GENERAL

Natural Gas Inventories Fall

[Energy Manager Today, Mar. 13] US natural gas inventories will end the heating season below 1 trillion cubic feet for the first time since 2003, according to the US EIA's latest Short-Term Energy Outlook.



The drop in natural gas inventories is due to large withdrawals of natural gas this winter to meet high heating demand. EIA expects growing natural gas production and moderate gas demand from the electric power sector will allow for a record build in natural gas stocks during the April-through-September injection season. EIA expects total natural gas consumption will average 71.3 Bcf per day in 2014, a drop of 0.1 per day from 2013. The EIA projects renewables used for electricity and heat generation will grow by about 0.9 percent in 2014. EIA estimates that wind power capacity will increase by 8.3 percent in 2014 to about 65 GW by the end of the year and will increase 17.9 percent to total more than 77 GW at the end of 2015. Electricity generation from wind is projected to contribute 4.6 percent of total electricity generation in 2015. The EIA expects continued robust growth in solar electricity generation, although the amount of utility-scale generation remains a small share of total generation at about 0.4 percent in 2015.

Power Grid Preparedness Falls Short, Report Says

[NY Times, Mar. 12] WASHINGTON — Nearly all the utilities that participated in two-day exercise last November to test the preparedness of the power grid for online and physical attacks said that their planning was not good enough, according to a report by the North American Electric Reliability Corporation, which organized the drill. But the participants, more than 2,000 of them from across the United States, Canada and Mexico, said the exercise taught them lessons about whom they would need to communicate with in an attack, and where their vulnerabilities were. The report had few details, because organizers said they did not want to provide a road map about the shortcomings and because they had promised to limit the scope of their evaluation to

induce utilities to participate. But the reliability group is communicating with the utilities individually about their performances.

INDUSTRIES AND TECHNOLOGIES

[Energy Department Announces \\$10 Million for Innovative Commercial Building Technologies and Unveils New Commercial Buildings 101 Video](#)

[Energy.gov website, Mar. 5] The Energy Department today announced a \$10 million funding opportunity to help demonstrate and deploy energy efficiency technologies for commercial buildings, including projects that will bring next generation building systems and components to a broader market faster – helping to save building owners and businesses money by saving energy. The Department also released a new video in its Energy 101 series highlighting how commercial buildings can incorporate whole-building design and innovative technologies to improve energy performance. These proven strategies, including daylighting, shading, and plug and process loads, support the Administration's Better Buildings Initiative, which is aimed at making commercial buildings 20% more efficient by 2020. Currently, commercial buildings consume more than 18 quadrillion British thermal units (quads) of primary energy use annually, or about 18% of all the energy used in the nation in 2012. If building owners adopt these cost-effective technologies, the annual energy consumption of commercial and industrial buildings could be reduced by 6 quads.

[LEDs on Track To Surpass CFLs](#)

[Energy Prospects West, Mar. 4] Light-emitting diode light bulbs are on track to surpass compact fluorescent light bulbs in the marketplace, thanks to rapidly improving efficiency and a slight environmental edge, say researchers at Pacific Northwest National Lab. LED technology is much newer than CFL technology, giving LEDs a big margin for improvement in energy efficiency and in the manufacturing process, so that environmental impacts can be lessened and the cost of the bulbs lowered, said Marc Ledbetter, head of PNNL's solid-state lighting research program. "CFLs are old technology," Ledbetter told Energy Prospects West. Ledbetter said that in 2012, LEDs were "marginally more efficient than CFLs," but if the technology continues its rapid pace of improvement in efficiency, the gap between the two technologies "will widen significantly." During 2012, Ledbetter and his team studied the total environmental impact of LEDs -- including the energy and natural resources consumed by their manufacture, transport, operation, and disposal -- and compared them to CFLs. Using 15 different parameters, LEDs had less environmental impacts in all but one category.

[The Bioenergy Grid](#)

As energy costs rise, bioenergy -- renewable energy made from organic sources, such as biomass -- is turning into a viable alternative where the technology has advanced enough that biomass power plants are small enough to fit on a farm and can be built at relatively low costs. Creating a bioenergy grid with these small plants could benefit people in rural areas and provide relief to an aging U.S. power grid, according to University of Missouri (MU) research. "Transporting power through power lines to remote, rural areas is very inefficient and can be expensive for farmers and other rural citizens," said Tom Johnson, Frank Miller Professor of Agricultural and Applied Economics in the MU College of Agriculture, Food, and Natural Resources, and professor in the MU Truman School of Public Affairs. "Farmers already have access to a large amount of biomass material left over each year after harvests. If they had access to small biomass power plants, they could become close to self-sustaining in terms of power." With enough improvements to the grid, users could provide additional power to consumers across the country, helping to stabilize the national power grid.

LEGISLATION AND REGULATION

[Database Tracks 2014 Energy Legislation](#)

[Energy Manager Today, Mar. 12] According to the Center for the New Energy Economy (CNEE), which tracks energy legislation in all 50 states, the most [common energy](#)

[legislation in 2014 relates to changes in PUC procedures, authority and rate recovery](#). Examples of legislation in this class include a proposal in West Virginia (HB 2803) to require integrated resource planning and a measure in Virginia (SB 643) relating to the recovery of costs for offshore wind facilities. As of late February, the AEL Tracker contained 1,268 bills introduced in 2014. [CNEE has catalogued the policy topics covered by each of these bills and highlights the 15 most common policy topics](#) introduced this year. The second most popular category is tax incentives, financing programs, and grants and rebates. Three noteworthy examples include a PACE bill in Hawaii (SB 3110) and a measure to authorize, and provide funding for, on-bill financing programs in Nebraska (LB 978). New York has also introduced a bill (A 8381) to provide tax incentives to banks that provide clean energy loans.

[DOE Sets Up Six Wind Energy Regional Resource Centers Across the U.S.](#)

[North American Wind Power, Mar. 13] Working closely with the DOE and NREL's broader outreach and education programs, these centers will aim to provide accurate, impartial information about challenges facing wind deployment in their regions to aid in efforts to overcome or mitigate these challenges; use best practices in education and outreach to deliver this information to create an educated stakeholder community; and work with decision-makers to ensure they have the tools to make informed decisions about wind energy projects and related policies in their jurisdictions.

[E.P.A.'s Proposed Rules on Water Worry Farmers](#)

[NY Times, Mar. 12] Water rarely flows in one of the streambeds — it really seems to be little more than a small ditch — that Dean Lemke points out to a visitor on his 800-acre farm in Dows, Iowa. “I wouldn’t even call it a stream,” he said. “There is only water flow in it when it rains.” Mr. Lemke is a former Iowa state government official who supervised water-quality programs. He is also a fifth-generation farmer who grows corn and soybeans on his acreage, about 75 miles north of Des Moines, and he has never worried that the government would be concerned about that small ditch. But that may soon change. The Environmental Protection Agency is set to issue regulations that farmers like Mr. Lemke say may require them to get permits for work for which they have long been exempt. The E.P.A. says the new rules are needed to clarify which bodies of water it must oversee under the federal [Clean Water Act](#), an issue of jurisdiction that the agency says has been muddled by recent court rulings. Opponents say the rules are a power grab that could stifle economic growth and intrude on property owners’ rights. There is no timetable for when the rules will be released. But if the agency expands its jurisdiction over streams like the one on Mr. Lemke’s farm, he and other farmers say, the move could prove costly by requiring farmers to pay fees for environmental assessments and to get permits just to till the soil near gullies, ditches or dry streambeds where water only flows when it rains. A permit is required for any activity, like farming or construction, that creates a discharge into a body of water covered under the Clean Water Act or affects the health of it, like filling in a wetland or blocking a stream. The proposed regulations have also raised concerns among industries beyond agriculture, and objections have been filed by several groups.

[FERC Directs Development of Physical Security Standards](#)

[FERC.gov website, Mar.] The Federal Energy Regulatory Commission (FERC) took action today to provide for the resilience of the transmission grid by directing the North American Electric Reliability Corporation (NERC) to develop reliability standards requiring owners and operators of the Bulk-Power System to address risks due to physical security threats and vulnerabilities.

[Minnesota Creates Methodology To Value Electricity from Solar PV](#)

[Solar Server.com, Mar. 14] Regulators in the U.S. state of Minnesota have approved a formula for utilities to determine the value of electricity from solar photovoltaic (PV) generation, as the first state in the nation to do so. The “Value of Solar” methodology includes avoided transmission, fuel and health and environmental costs, including the social cost of carbon. The Minnesota Public Utilities Commission (MPUC) ruling does

not require that the state's four private utilities adopt the methodology, but offers it as an alternative to net metering. "Yesterday, Minnesota utility regulators decided what solar power is really worth, and it turns out to be worth more than what producers have been credited for in the past," said Fresh Energy Executive Director Michael Noble. "When utilities credit people's bills fairly for the solar electricity they produce, soon everyone who wants solar can have it." Value of PV higher than current retail electricity.

[Senator Inhofe Introduces Bipartisan Bill to Incentivize Natural Gas Vehicles](#)

[NASEO website, Mar. 11] Senator Jim Inhofe (R-OK), senior member of the Environment and Public Works Committee, recently introduced with Senator Carl Levin (D-MI) the Alternative Fuel Vehicle Development Act, a bill that would incentivize the production and purchase of alternative fuel and natural gas vehicles.

WESTERN POWER

[Contentious Solar Energy Issue Raised in Colorado](#)

Net metering, a contentious issue for solar industry across US, center of debate in Colorado

[Associated Press, Mar. 12] When Xcel Energy raised questions about a system known as net metering that helps determine the credit homeowners get from utility companies for putting solar panels on their roofs, regulators found the issue so contentious they separated it from a review of the renewable-energy policies of Colorado's largest utility. On Wednesday, Colorado's Public Utilities Commission set a hearing in April to start what is likely to be a protracted process of addressing questions solar proponents fear could lead to changes that could hurt their industry. Although most states have net-metering policies, the practice has touched off debates from Vermont to Hawaii that could have a profound effect on renewable-energy policies across the nation. In Golden, near Denver, the city council responded to possible changes in Colorado's net-metering policies with a resolution urging regulators "to reject efforts by Xcel Energy to limit net metering."

[Solar Power May Be a 'Game Changer,' But Utilities Want To Help Set the Rules](#)

[Climate Wire, Mar. 13] From sun-soaked California and Texas to snow-weary Minnesota, the United States this week saw a palpable surge in solar activity, whether measured in megawatt-hours produced or in hours of testimony before public officials trying to find the best way to integrate more solar power into state energy portfolios. On Monday, California officials confirmed that the state had set two consecutive records for solar power generation on Friday and Saturday, with roughly 4,000 megawatts of solar energy moving across the state's electricity grid over the two-day period, enough to power 3 million homes. The California generation records -- 3,926 MW on Friday, followed by 4,093 MW on Saturday -- was roughly double the previous peak solar generation day, June 7, 2013, when the state produced 2,071 MW, according to the California Independent System Operator. "This shows that California is making remarkable progress in not only getting new resources approved and connected to the grid, but making meaningful contributions in keeping the lights on as well," Steve Berberich, the California ISO's president and chief executive officer, said in a statement announcing the generation records. "The milestones illustrate that we are well into a new era when clean, renewable energy is shouldering its share of our electricity needs -- and that is exciting."

[Texas Clean-Energy Projects Created 6,400 Jobs Last Year](#)

[San Antonio Business Journal, Mar. 14] Clean-energy production and energy-efficient transportation projects created nearly 6,400 jobs in Texas last year, according to a new report by nonpartisan business group Environmental Entrepreneurs, or E2. The Lone Star State ranked No. 2 behind California, which generated around 15,400 clean-energy jobs in 2013. E2 cited Nest Labs' announcement of 140 new technical support and customer service jobs as an example of Texas' expanding clean-energy sector. Nest Labs, acquired by [Google](#) on Feb. 7, has an expanding customer base for its energy-









saving thermostat.

[Western Governors' Association wins Regional Energy Advocate Award](#)

[WGA website, Mar. 4] The Western Governors' Association has received the [Regional Energy Advocate Award](#) for leadership in advancing nuclear energy as a resource and supporting development of new nuclear technology, specifically small modular reactors. WGA was presented the award at the sixth annual [Partnership for Science & Technology](#) (PST) Energy Advocate Awards banquet in Idaho Falls, Idaho. WGA Policy Advisor Chris Scolari accepted the award on behalf of WGA and its Executive Director Jim Ogsbury.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

-  [Angel Investment Tax Credit Program](#) - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here. [LEARN MORE](#)
-  [Arizona Innovation Accelerator Fund](#) - The Arizona Innovation Accelerator Fund Program is an \$18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona. [LEARN MORE](#)
-  [Arizona Innovation Challenge](#) - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award \$1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from \$100,000 to \$250,000). [LEARN MORE](#)
-  [AZ Fast Grant](#) - Enables Arizona-based technology companies to initiate the commercialization process. Total funds available for this grant round are \$175,000. Maximum awards of \$5,000 and \$20,000 will enable companies to accomplish one of four scopes of work. [LEARN MORE](#)
-  [AZ Step Grant](#) - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets. [LEARN MORE](#)
-  [Commercial/Industrial Solar Energy Tax Credit Program](#) - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. [LEARN MORE](#)
-  [Healthy Forest](#) - The primary goal of the Healthy Forest Enterprise Incentives Program is to promote forest health in Arizona. The program achieves this by proving incentives for certified businesses that are primarily engaged in harvesting, processing or transporting of qualifying forest products. [LEARN MORE](#)
-  [Job Training Program](#) offers job-specific reimbursable grants for employers

creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round. [LEARN MORE](#)

- ✚ [Renewable Energy Tax Incentive Program](#) offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round. [LEARN MORE](#)

- ✚ [Research and Development Tax Credit](#) is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue. [LEARN MORE](#)

- ✚ [Quality Jobs Tax Credit Program](#) - The primary goal of the Quality Jobs Tax Credit program is to encourage business investment and the creation of high-quality employment opportunities in the state. The program accomplishes this goal by providing tax credits to employers creating a minimum number of net new quality jobs and making a minimum capital investment in Arizona. [LEARN MORE](#)

- ✚ **Bonds Administered by the Arizona Commerce Authority**

- [Private Activity Bonds \(PAB\)](#) - Tax exempt bond financing, for federal purposes, offers an alternative financing mechanism for certain projects. [LEARN MORE](#)
- [Qualified Energy Conservation Bonds \(QECB\)](#) - Tax credit bonds are available as an alternative financing mechanism for certain green projects. [LEARN MORE](#)

- ✚ **Federal Programs**

- **Small Business Innovation Research (SBIR) Program** - SBIR is a competitive program that encourages small businesses to explore their technological potential, as well as, providing incentive to profit from its commercialization. [LEARN MORE](#)
- **Small Business Technology Transfer (STTR) Program** - STTR is an important small business program that expands funding opportunities to meet the nation's scientific and technological challenges in the 21st century. [LEARN MORE](#)
- **Work Opportunity** - The Work Opportunity Tax Credit (WOTC) is a federal tax credit of up to \$9,000 that Congress provides to private-sector businesses for hiring individuals from nine target groups who have consistently faced significant barriers to employment. [LEARN MORE](#)

- ✚ [Pollution Control Tax Credit](#) - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

- ✚ [Renewable Energy Production Tax Credit](#) - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).


- ✚ **Sales Tax Exemption for Machinery and Equipment**


Exemptions are available for:

1. Machinery or equipment used directly in manufacturing, see [ARS 42-](#)

- 5159(B)(1).
2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see [ARS 42-5159\(B\)\(4\)](#).
 3. Machinery or equipment used in research and development, see [ARS 42-5159\(B\) \(14\)](#).

Questions can be directed to Christie Comanita (602-716-6791).

 **Solar Liquid Fuel Tax Credit** - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

 **Database of State Incentives for Renewables and Efficiency (DSIRE)**

- [Arizona Incentives/Policies](#)
- [Federal Incentives/Policies](#)
- [Solar Policy News](#) - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- [National Incubator Initiative for Clean Energy \(NIICE\)](#) - Close Date: March 21, 2014
- [Next Generation Photovoltaic Technologies III](#) - Close Date: March 24, 2014
- [FY 2014 Vehicle Technologies Program Wide Funding Opportunity Announcement](#) - Close Date: April 1, 2014
- [Renewable Carbon Fibers](#) - Concept Papers Submission Deadline: 03/03/2014 at 5:00 P.M. Eastern Standard Time. Submission Deadline for Full Applications: 04/11/2014 at 5:00 P.M. Eastern Standard Time
- [Geothermal Play Fairway Analysis](#) - Close Date: April 11, 2014
- [U.S. Wind Manufacturing: Taller Hub Heights to Access Higher Wind Resources and Lower Cost of Energy](#) - Close Date April 14, 2014
- [Building Energy Efficiency Frontiers and Incubator Technologies \(BENEFIT\) - 2014](#) - Close Date April 21, 2014
- [Clean Energy Manufacturing Innovation Institute for Composites Materials and Structures](#) - Close Date: April 22, 2014
- [Integrated Enhanced Geothermal Systems \(EGS\) Research and Development](#) - Close Date April 30, 2014
- [Low Temperature Geothermal Mineral Recovery Program](#) - Close Date May 2, 2014
- [Commercial Building Technology Demonstrations](#) – Concept Paper Submission Deadline: March 31, 2014. Full Application Submission Deadline:

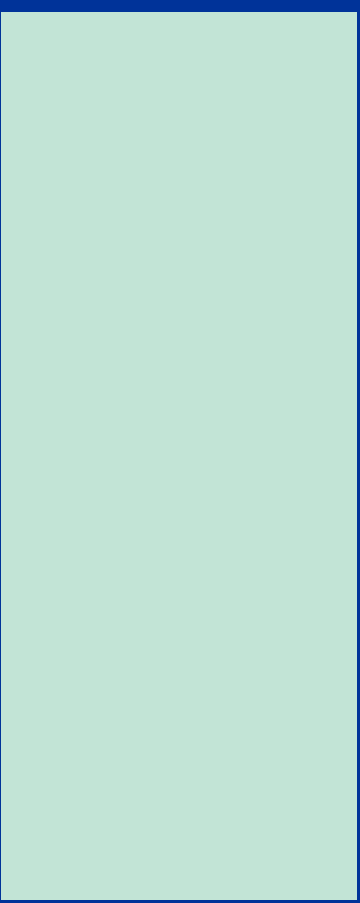









May 19, 2014.

- [Bioenergy Technologies Incubator](#) - Close Date: May 23, 2014
- [Advanced Fossil Energy Projects](#) - Solicitation Number: DE-SOL-0006303 - Expiration Date 11/30/2016
- [Sunshot "Race to the Roof" Initiative](#) - Registration Due October 31, 2014
- [Repowering Assistance Program](#) – Ongoing
- [Rural Business Enterprise Grants](#) - Ongoing
- [Rural Business Opportunity Grants](#) – Ongoing
- [Sustainable Agriculture Research and Education Grants](#) - Ongoing
- [Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power](#) – Various Deadlines
- ✚ [U.S. Dept. of Agriculture - Rural Development Grant Assistance](#)

ENERGY-RELATED EVENTS

2014

- ✚ [Solar O&M North America](#)
March 25-26, 2014 San Francisco, CA
- ✚ [Clean Tech Future Conference III](#)
April 9, 2014 Phoenix, AZ
- ✚ [International Geothermal Energy Forum](#)
April 23-24, 2014 Washington, DC
- ✚ [NEW! 32nd Annual Solar Potluck & Exhibition](#)
April 26, 2014 Catalina State Park
- ✚ [11th Annual Construction in Indian Country Nat'l., Conference](#)
April 28-30, 2014 Chandler, AZ
- ✚ [VerdeXchange Arizona](#)
April 30-May 2, 2014 Phoenix, AZ
- ✚ [NEW! Cybersecurity Summit](#)
May 7, 2014 Scottsdale, AZ
- ✚ [AWEA Windpower 2014](#)
May 5-8, 2014 Las Vegas, NV
- ✚ [NEW! AZ Water Association Annual Conference & Exhibition](#)
May 7-9, 2014 Glendale, Arizona.
- ✚ [Beyond the Border: Arizona Trade Mission to Mexico City & Guadalajara](#)
May 12-16, 2014
- ✚ [Sunshot Grand Challenge Summit 2014](#)
May 19-22, 2014 Anaheim, CA

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-  [Native American Economic Development & Energy Projects Conference](#)
June 16-17, 2014 Anaheim, CA
 -  [NEW! AZBio Expo 2014](#)
June 19, 2014 Scottsdale, AZ
 -  [32nd Annual West Coast Energy Management Congress](#)
June 25-26, 2014 Seattle, WA
 -  [National Geothermal Summit](#)
August 5-6, 2014 Reno, NV
 -  [HTUF 2014 National Meeting - The Forum for Action in High-Efficiency Commercial Vehicles](#)
September 22-24, 2014 Argonne, National Lab Argonne, IL
 -  [Geothermal Energy Expo](#)
September 28-October 1, 2014 Portland, OR
 -  [NEW! Governor's Celebration of Innovation](#)
November 13, 2014
 -  [ASU Sustainability Series Events](#)
 -  [Green Building Lecture Series](#)
Granite Reef Senior Center Scottsdale, AZ